



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

January 31, 1985

Mr. E. Steele McIntyre
P. O. Box 20
Eureka, Utah 84628

Dear Mr. McIntyre:

Re: Site Investigation of the Leach Site, North Lily Mining Corporation, PRO/023/007, Juab County, Utah

For your information, enclosed is a memorandum resulting from a site investigation of the North Lily Project performed by Tom Suchoski and myself. Also enclosed is a letter from Colorado School of Mines Research Institute, outlining the cyanide detoxification procedure to be used by North Lily.

If you have further questions concerning the site, I would be happy to reply anytime.

Sincerely,

Dave Hooper
Reclamation Hydrologist

jvd
0119R-4

0001

Colorado School of Mines Research Institute

April 10, 1984

CSMRI Project NP-841074

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PHONE (303) 279-2581 • TELEX 754211 • CSM Res Gldn

CSMRI

Mr. Bart Hanford
Lee Mining Corporation
P.O. Box 266
Paxton, IL 60957Re: Detoxification of North
Lily/Dragon Consolidated
Cyanide Leach Tailings

Dear Bart:

As part of the North Lily process evaluation, CSMRI was requested by Lee Mining to investigate detoxifying the North Lily cyanide leach residue. The details and the results of this preliminary study are discussed as follows:

The process flowsheet proposed by Lee Mining calls for dewatering and washing the cyanide leach residue on a horizontal vacuum belt filter. As an alternate to impounding the residue in a conventional tailings pond, detoxifying the material on the belt filter was considered. Conceivably, application of a hypochlorite solution to the final wash section of the belt would produce a cyanide-free residue. The residue could then be used to reclaim the site and the perpetual care problems associated with a tailings pond could be avoided.

The experimental work was based on the rationale that only the water-soluble species of cyanides are of concern. Prior studies conducted at CSMRI have shown that leaching similar residues for 2 hours in agitated vessels at 20% solids with water solubilizes approximately 95% of the water-soluble cyanides. The experiments performed for Lee Mining were based on this previous experience.

Two experiments were conducted in which 1.31 wt % NaOCl solution, in volumes equivalent to one cake displacement, were pulled by vacuum through simulated (repacked) filter cakes over a 90-second period. A 30-second vacuum dry period was applied, and the treated cakes were "cured" for 16 hours. The cured cakes were then reslurried with water and the filtrate analyzed for cyanides.

The filter cakes were supplied by Lee Mining from experiments conducted in their own laboratories. Reportedly, the cakes were representative of cakes that would be produced in actual practice. The test procedures and cake composition are described in the attached Exhibit 1.

EXHIBIT 6
COLORADO SCHOOL OF MINES RESEARCH INSTITUTE

Mr. Bart Hanford

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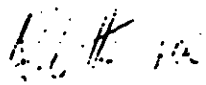
April 10, 1984

The results of each test (duplicate conditions) show no water-soluble, chlorinatable species of cyanide remained in the "cured" filter cakes. The chemical consumption of NaOCl was determined to be on the order of 1.0 lb/tons of dry residue. However, because some unreacted NaOCl remained with the solids, the total NaOCl consumed was found to be approximately 2.0 lb (100% reagent) per ton of dry solids.

The results of this program suggest that this detoxification procedure should be considered in lieu of conventional tailings impoundment.

Feel free to call if you have any questions or if we can be of any further assistance.

Sincerely,


Hal D. Peterson
Technical Consultant
Process Division

/rms
enc.